

***CLADOCHASIELLA DIVERGENS* gen. et sp. nov.**

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ABSTRACT — The mitosporic fungus *Cladochasiella divergens* gen. et sp. nov. is described as a contaminant from culture of a freshwater hyphomycete. It produces holoblastic elongate conidia arranged in basifugal sympodial chains.

KEY WORDS: mitosporic fungi, hyphomycetes, systematics, new taxon

RÉSUMÉ — *Cladochasiella divergens* gen. et sp. nov. (Hyphomycetes) est décrit. Cette espèce apparaît comme contaminant des cultures d'hyphomycètes d'eau douce. Elle produit des conidies holoblastiques en chaînes sympodiales basifuges.

MOTS CLEFS: Hyphomycètes, systématique, nouveau taxon.

Cladochasiella divergens n. gen. n. sp. appeared in a culture of *Fontanospora fusiramosa* Marvanová et al. (1997) after its revival from storage in distilled water. The original habitat of *C. divergens* is unknown.

The terms describing conidiogenous loci are adopted from Hennebert & Sutton (1994).

DESCRIPTION

***Cladochasiella* Marvanová gen. nov.**

Etym.: *clados* (Greek) = branch, *chasis* (Greek) = fission; the suffix “-chasium” is used in botanical terminology for sympodially arranged branches in some inflorescences.

Fungi mitosporici, Hyphomycetes. Teleomorphosis ignota.

Hyphae hyalinae, ramosae, septatae. Conidiophora semimacronematosa. Conidiogenesis holoblastica. Cellulae conidiogenae incorporatae. Conidia elongata, catenata, omnia

sub apice elementi precedenti orientia; catenae fractiflexae, simplices vel ramosae. Dehiscencia conidiorum schizolytica.

Mitosporic fungi, Hyphomycetes. Teleomorph unknown. Hyphae hyaline, branched, septate. Conidiophores semimacronematous. Conidiogenesis holoblastic. Conidiogenous cells integrated. Conidia elongate, catenate, each arising below the apex of the parent element. Chains fractiflexuous, simple or branched. Seccession of conidia schizolytic.

Type species: *Cladochasiella divergens* Marvanová sp. nov. (Figs 1, 2)

Etym.: *divergens* (Lat.) = diverging; describes the appearance of the branched conidial chains.

Coloniae monosporicae albae, deinde brunnescentes, modice crescentes. Mycelium aerium copiosum, funiculosum, hyphis 1.5-4 µm latis, pars reversa coloniae brunneo-aurantiaca. Mycelium in substrato hyalinum, hyphis usque ad 5 µm latis; cellulae inflatae elongatae, usque ad 8 µm latae adsunt.

Conidiophora apicalia, 3-5 µm lata, simplicia vel ramificata, leniter nodosa, rami acrotoni, alternati vel oppositi, usque ad 100 × 3-5 µm, saepe ut segmenta breviora secedentes. Cellulae conidiogenae incorporatae, apicales vel intercalares, cum uno vel nonnullis locis conidiogenis. Loci apicales vel laterales, monoblastici, cicatrices denticulatae, latae, non-incrassatae. Conidia blastica, in catenis sympodialibus, simplicibus vel ramificatis, saepe dichotomis et late divergentibus, raro alternatis vel oppositis vel adjacentibus connexa, in segmenta breviora vel conidia singularia fragmentantibus. Conidiorum initiatio hologena, dehiscencia schizolytica, cicatrices saepe excentricae. Conidia clavata, nonnumquam inaequilateralia vel allantoidea, raro bacilliformia, continua vel usque ad 4-septata, (5-)15-30 (-45) × 2.5-4 µm.

Monoconidial colonies (2% malt agar, 15°C, diffuse light) off-whitish, becoming brownish with age, growing moderately fast, reaching 9-10 mm diam. after 11 days, aerial mycelium abundant, funiculose, hyphae 1.5-4 µm wide, reverse brown with orange hue. Advancing hyphae straight, loosely arranged, first branch c. 130-200 µm below the hyphal apex. Substrate mycelium hyaline, hyphae up to 5 µm wide, with inflated elongate segments up to 8 µm wide. Sporulation copious on the water surface and above water within a few days of submergence of a piece of the agar culture in standing distilled water, but scanty when the culture is aerated under water. The upper layer of the substrate mycelium becomes darker brown after submergence in light, but all its elements remain hyaline. Conidiophores apical, integrated with hyphae and hence their lower end undetectable, 3-5 µm wide, simple or branched, somewhat nodose, branches acrotonous, alternate or opposite, up to 100 × 3-5 µm, often fragmenting and seceding as clavate, septate segments. Conidiogenous cells integrated, apical or intercalary, uni-to multilocal. Conidiogenous loci apical or lateral, monoblastic, seccession scars broad, unthickened, on truncate denticles. Conidia blastic, sequential, in simple or branched sympodial chains, branches often dichotomous and then broadly diverging, rarely alternate or opposite or adjacent on the same side of the parent element (fig. 2B); chains breaking down randomly into smaller units, in older cultures up to individual conidia. Each conidium hologenous, arising below the apex of the preceding element, seccession schizolytic, detachment scar often eccentric, unthickened, truncate. Single conidia clavate, sometimes inequilateral, or allantoid, rarely bacilliform, continuous or up to four-septate, (5-)15-30 (-45) × 2.5-4 µm.

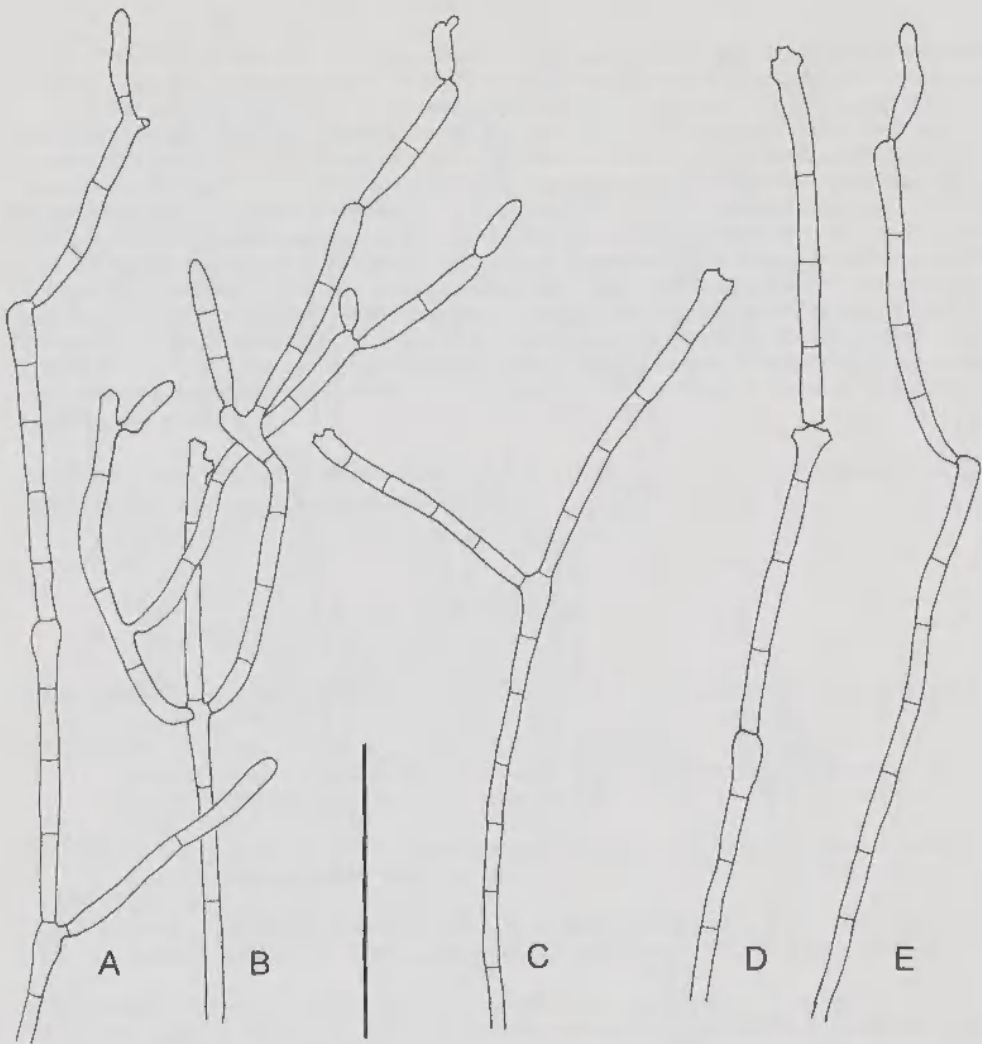


Fig. 1. — *Cladochasiella divergens* CCM F-13489, conidiogenous structures. A, B: branched conidiophores with developing conidia and spent conidiogenous cells. C, D: spent conidiophores. E: simple conidiophore with developing conidia. Scale bar = 50 μ m.

Holotype: **PRM** 842967, ex CCM F-13489. Culture examined: CCM F-13489, a contaminant isolated from a storage bottle with distilled water and a culture of *Fontanospora fusiformis* CCM F-12089.

Conidia of this fungus have probably been seen by Ingold & Ellis (1952, fig. 1, e) in scum on a freshwater tidal ditch at Wheatfen near Norwich, U.K. The original habitat of our fungus remains unknown.

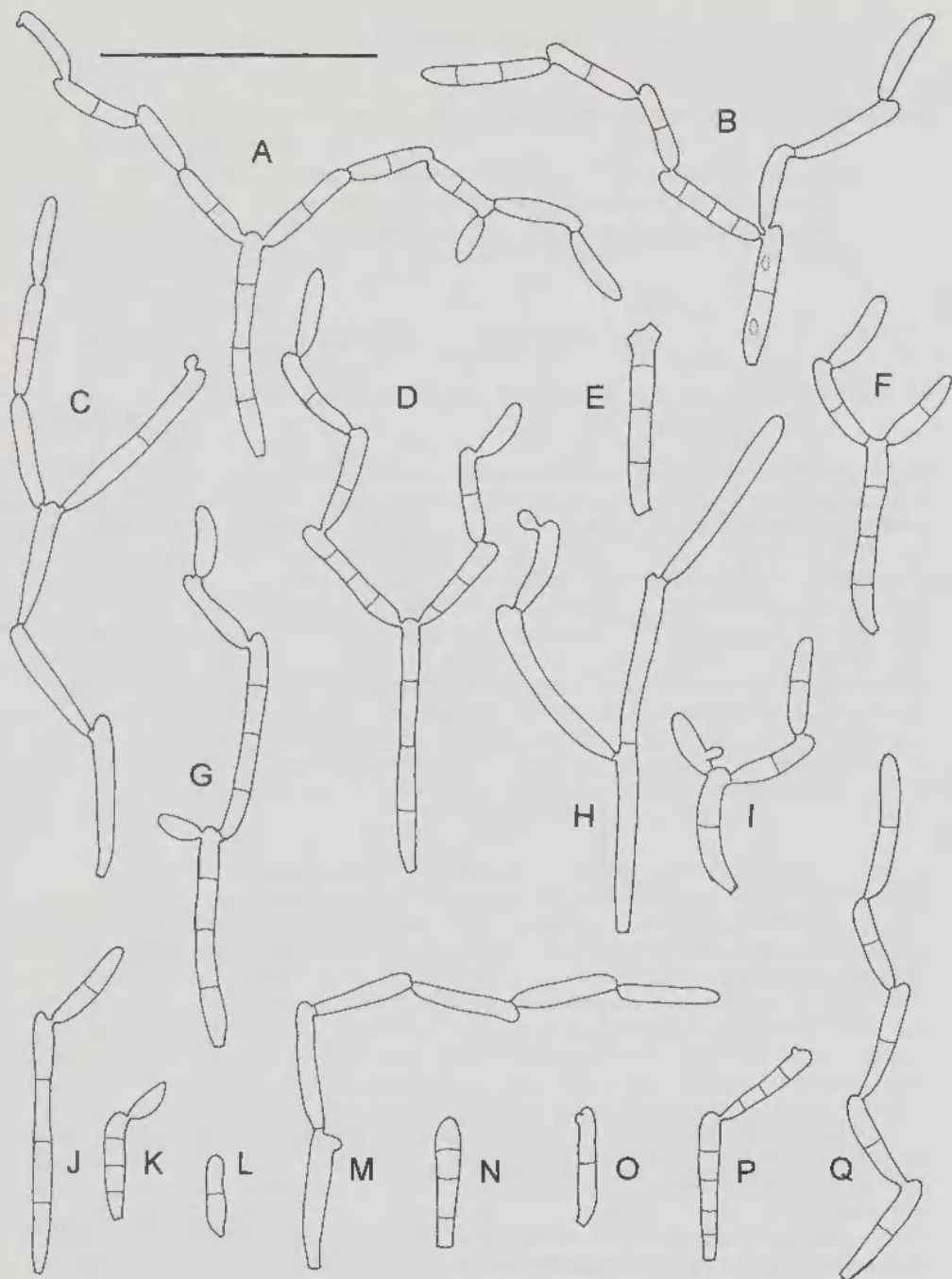


Fig. 2. — *Cladochasiella divergens* CCM F-13489, conidia. A, C, D, F, I: dichotomously branched chains of conidia. B: conidium bearing two adjacent chains of conidia. G: Conidium with two subapical opposite elements. H: conidium with single subapical conidium and lateral chain of conidia, in alternate position. J, K, P: small units of conidial chains. E, L, N, O: single conidia. M, Q: unbranched conidial chains. Scale bar = 50 μ m.

DISCUSSION

The interpretation of the fertile structures is not unequivocal. They may be understood as complex, branched conidia composed of short segments, or as chains of simple conidia, remaining connected at least in young stages. Blastocidia in branched chains appear in several leaf litter or wet habitat fungi such as *Cladosporium strumelloideum* Mil'ko & Dunaev (1986) described from a submerged *Carex* leaf, *Diploospora longispora* Matsushima (1975), or *Strumella uniseptata* Matsushima (1975). *C. strumelloideum* departs from *Cladosporium* because it lacks the typical, thickened detachment scars on conidia and conidiophores and is rather close to *Strumella macrospora* Matsushima (1975). *Strumella uniseptata* is more similar to our fungus, but *Strumella* Sacc. (non *Strumella* Fries) is a not well known genus, according to Hennebert (1968) similar to the aeroaquatic *Spirosphaera* van Beverwijk. *Diploospora longispora* also looks similar to *C. divergens*, but the type species *D. rosea* Grove is quite different. *Fusidium* Link might also accommodate our fungus, but like the others, it lacks the sympodial branching of conidial chains. Anyhow, these taxa are either not well known or differ from the commonly accepted concept of their genera. The sympodial mono- or dichasium-like arrangement of conidia in chains in our fungus is unique and therefore I feel justified to erect a new genus for it.

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